

Natural Resources Inventory and Assessment

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BLACKSTONE RIVER VALLEY

National Heritage Corridor Commission



Blackstone River Valley National Heritage Corridor
Natural Resources Inventory and Assessment

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Blackstone River Valley National Heritage Corridor

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INTRODUCTION

OVERVIEW

Natural resources and the systems that link them – geology, hydrology and habitats – are important to the historic and cultural landscapes that we value and wish to preserve. The natural and built environments are inextricably linked. Preserving key natural landscapes enhances historic settings and protects the natural systems that are shared throughout the Valley and are vital to the region's health.

This Natural Resources Inventory and Assessment is offered as an overview and selective description of the natural significance of the Blackstone River Valley National Heritage Corridor. The analysis identifies a rich array of most important sites and leads to specific recommendations for action.

The purpose of the Inventory is thus three-fold:

- to reveal the natural features and systems of the Corridor which contribute to the understanding of national cultural landscape values;
- to recommend strategies for protection, restoration, management, or acquisition; and
- to provide a framework for local and regional decision-making.

By better understanding the role of natural resources in our history, in our present environment and in our daily well-being, we as individuals and communities will make better decisions for the future. Building on past and ongoing efforts to remedy environmental problems, protect land and water for the enjoyment and health of generations, and unlock the potential of recreational resources, communities in the Valley are actively living their history and shaping their environment.

Corridor Resources

The Blackstone River Valley contains unique natural and cultural resources that offer special opportunities for preservation. The region is a rich patchwork of natural resources, including forests, meadows, wetlands, rivers and tributaries. In addition, the Valley holds a distinctive combination of historic landscapes, that includes urban centers, towns, villages, mills and farms. Few places exist where such a concentration of historic, cultural and natural resources have survived and have the potential to be more accessible.

Many historic resources of the Valley have survived through the years; some are well-preserved. Linkages between past and present, and between nature and culture, represent the core of the cultural landscape in the Blackstone Valley. Focusing public attention on efforts to combine historic preservation and environmental recovery make this special landscape important to residents. Interpretive programs can also help tell the story of industrialization in the Valley – its national significance, its effect on the local economy and its effect on the environment. Dams, canals and mills have altered the flow and hydrology of the River; timber harvests, quarrying and agriculture have reshaped the land. Rehabilitating and interpreting these sites can instill a greater understanding of the revolutionary changes associated with our nation's industrial history, of human impact on the natural landscape, and of the belief in the possibilities for future recovery.

The natural resources and linear shape of the River and Valley lend themselves particularly well to the development of recreational opportunities based on trails: boating on navigable stretches of the River and its tributaries, hiking along the River's banks, the Canal, and through forests, biking along old railroad beds which also follow the River and Canal. Converging and connecting loops among these trails, in addition to fishing, could offer a variety of recreational experiences to residents and visitors while linking the Valley's natural and historic resources.

Located strategically near large urban centers, the Blackstone Valley offers an attractive quality of life away from the traditional suburbs, yet increasingly accessible through a growing highway network. The influx of new residents to the valley, and expanding business opportunities provide a foundation for pride and positive change. Without advance planning, however, these events can result in deterioration of the Valley's natural and cultural environment. Among the greatest concerns are setbacks to our slowly rebounding river system, the loss of traditional landscapes, and the fragmentation of important natural habitats. The challenge for this changing cultural landscape is to shape growth through an integrated, resource management approach: balancing historic preservation, environmental conservation and economic development.

THE RIVER

Origins

The Blackstone Valley was formed by glacial action about fifteen thousand years ago, during the Laurentide Glaciation. As the glacier moved southward, its mile thick river of ice pushed aside rocks and soil in its path, and slowly carved out a wide trench. This process formed the high, steep banks which are still evident along several sections of the Blackstone River. As temperatures rose and the glacial period came to an end, the glacier began to melt and recede. Glacial meltwater flowed through the trench that had been created, thus beginning the process of erosion which has gradually shaped the course of the Blackstone River over the past fifteen thousand years.

The hydrological source of the Blackstone River is located at an elevation of 1,300 feet on the slopes of Asnebumskit Hill near Holden, Massachusetts, from which it travels south into Rhode Island and eventually empties into Narragansett Bay. The headwaters of the River – wetlands and brooks feeding into the river stream – are found throughout the city of Worcester and beyond, many of them now buried into culverts. Along its way, the River drops a total of 430 vertical feet, and passes through the second and third largest population centers of New England: Worcester, Massachusetts and Providence, Rhode Island. The Blackstone River drainage system is one of the seven major river systems of the northeast.

The Blackstone River, its tributaries, banks and floodplains have provided a rich habitat for flora, fish and wildlife. The river served as an invaluable natural resource to the first settlers of the region, Native Americans, who established semi-permanent settlements in the Valley, and took advantage of its fertile soils and abundance of salmon. Later, by the mid-17th century, European settlers began establishing small agrarian communities in the Valley. At the end of the 18th century, the area was still predominantly rural and agrarian, but after the Revolutionary war, processing and manufacturing became increasingly important to the Valley's economy. The Blackstone River Valley's abundant resources were then used to quarry minerals, harvest timber, support grist mills, and make leather and metal products. It wasn't until the 19th century, however, that the river began to be systematically harnessed for its power.

Industrialization

A series of steep drops along the length of the Blackstone River provided ideal conditions for the development of water powered industry. Samuel Slater arrived in America in 1790, with managerial experience and technical knowledge of textile manufacturing in England. With the assistance of local merchants and artisans, he helped establish the first successful water-powered textile mill in America. Slater Mill was established on the Blackstone River, in Pawtucket, Rhode Island. This achievement is credited with spawning the birth of America's industrial revolution. Development of the Slater textile mill catalyzed the development of water-driven technology throughout the length of the Blackstone River. By 1814 water-powered mills occupied all of the readily available dam sites in the Valley. This was perhaps the first major ecological impact brought on by human use of the resource. The construction of dams along the Blackstone River served to prevent the migration of anadromous fish up the river from Narragansett Bay. The landscape of the Valley was forever altered by this proliferation of mills. Mill villages sprang up alongside the river, and dams, mill ponds, a railroad and canal were subsequently built to support the manufacturing process.

The River Today

The Blackstone River's legacy of intense development left its waters polluted and its course forever altered. Industrial activity and accompanying settlement left the river severely polluted with untreated sewage, detergents, solvents, heavy metals and other industrial wastes. The presence of numerous dams, canals and other human interventions means that little remains of its natural, free-flowing state. A 1990 report sponsored by the EPA termed the Blackstone River 'the most polluted river in the country with respect to toxic sediments.' While toxic sediments trapped behind industrial-era dams continue to plague the long term health of the River, considerable headway in water quality improvement has been made as a result of the Clean Water Act and other significant

pollution reduction initiatives. Where much of the main stem, in its darkest days, only contained sludge worms and suckers, it now hosts many species of fish including yellow and white perch, largemouth bass, and pickerel. More remains to be done, but measurable signs of recovery are encouraging.

Following an era of economic decline, the Blackstone River Valley is currently experiencing a period of renewed growth and change. Within commuting distance to several large metropolitan areas, the region is experiencing the influx of new residents and the development of commercial and retail establishments to serve them. These contemporary development pressures are resulting in water fluctuations in the River from hydroelectric and other power plant operations, as well as in increased discharge from waste water treatment plants. In some places valuable wetlands are still being filled and vegetated buffer zones are being destroyed.

Despite generations of industrialization and development, the Blackstone River Valley still holds large tracts of open space that serve as valuable wildlife habitat, as well as numerous areas of scenic beauty, evident in its rivers and tributaries, wetlands, forests, fields and rock outcroppings. The Blackstone Gorge stands as a reminder of the River's wild state, and away from the main stem of the River, relatively undisturbed natural environments can still be found.

Challenges – Environmental Remediation

However rich the Valley's history, a clean environment is crucial to a high quality of life for Valley residents, and the successful development of historic properties and parks and recreation facilities along the River and Canal corridor. The most important natural resource of the Valley is the Blackstone River itself: upgrading its quality and maintaining its flow are priority actions. Conservation of the river's natural resources is a rallying point for many valuable efforts, including local cleanups. The most difficult and costly environmental challenge, however, is to address past industrial abuse. Anti-pollution laws and the establishment of municipal wastewater treatment plants have improved the quality of the River in recent years. These efforts must continue and they require cooperation from all levels of government, as well as significant financial resources. Equally important, local decision-making is key to shaping ongoing land use issues which continue to affect natural resources and the cultural landscape.

Opportunities – Recreation Potential

The Blackstone River Valley is currently underused with respect to its potential for recreational development. The Corridor is in proximity to Boston, Worcester & Providence – some of the most densely populated areas of New England. More than 6 million people live within 50 miles of the Valley and could enjoy its resources if it were made more accessible.

Opportunities for canoeing, kayaking and recreational fishing presently exist on the River, but activities are limited by inadequate river access and unsafe pollution levels for consumption of fish. Additional potential exists for bicycling, hiking, cross-country skiing, picnicking and sightseeing throughout the length of the Corridor. Both Rhode Island and Massachusetts continue to develop and expand State Heritage Parks, improve access to the River, improve water quality and develop canoe portages. Both states have already acquired significant parcels of riverfront land.

Outdoor recreational activities along the Blackstone River and its tributaries are enriched by the Valley's historic and cultural context. Development of recreational opportunities in combination with the preservation of historic resources along the River and its banks can connect important historic sites to provide a continuous corridor of recreation and educational experience.

THE VALLEY

Watersheds and Landscapes

The Blackstone River Valley is defined by the Blackstone River itself, which forms the natural spine of the Valley, and provides the physical presence that defines the region's identity. The Blackstone River watershed stretches from the brooks that form its headwaters in Worcester, Massachusetts, to its mouth at Narragansett Bay in Providence, Rhode Island. Along the way the Blackstone is joined by four major rivers, in addition to many smaller tributaries. The watershed also supports over seven thousand acres of ponds, lakes and reservoirs.

Upland from the River, the landscape of the Blackstone Valley is composed of an esthetically pleasing combination of hilltop villages, surrounded by farms and forests. This has created a pattern of village and open space which leaves open large tracts of land that provides excellent wildlife habitat.

Landscape Typology in the Blackstone River Valley

Wetlands – These are areas low in elevation, where the soil holds water and provides ideal conditions for water tolerant plants and animals. This is a distinctive and fragile habitat type; so fragile that a majority of the species on the Massachusetts and Rhode Island rare plant and rare animal lists are wetland species.

There are four major types of wetlands:

Open water, where surface water is visible, whether year-round or during high water seasons;

Emergent marshes, where cattails or other herbaceous plants grow;

Shrub swamps, where water willow, buttonbush, swamp rose and other shrub species are found;

Forested swamps, dominated by either red maple or white cedar, with a variety of understory growth.

Floodplain Forest – This forest type occupies moist sites along rivers and floodplains, where spring flooding occurs annually. Floodplains are intrinsically unstable due to the dynamics of the river, so floodplain tree species are able to grow fast and colonize newly formed areas. Predominant tree species in the floodplain forest are red maple, eastern sycamore, willow and elm. The types of floodplain forests and the composition of the species that grow in them are dependent on how often a site is flooded. Those flooded most frequently maintain more wetland-dependent species such as sycamore, green ash and willows. Higher floodplains where the forest only floods every few years have more dry soil-tolerant species such as oaks and black birch. Red maple is usually found in all types of floodplain forests.

Upland Forest – This is a forest located above the floodplain of the river corridor, in comparatively dry soils, and dominated either by deciduous trees or conifers. Deciduous types of forests usually contain mixed oaks in combination with a variety of other trees including hickories, birches, maples and white ash. Coniferous forest types are generally dominated by one species; in the Corridor these are either white pine, or in wetter situations, hemlock. To a lesser extent, mixed forest types are also encountered where oak and white pine are mixed. Largely cleared for farming, lumber and fuelwood during the 18th and 19th centuries, most of today's upland forest is secondary growth, with an understory of mountain laurel, blueberry and mapleleaf viburnum.

Farms and Hilltop Villages – Some of the oldest remaining settlements in the Valley. Beginning in the early 18th century, the European settlement pattern consisted of dispersed farms and hilltop (or crossroads) villages. Particularly found in the northern reaches of the Valley, these villages were often formed around a meeting house and village green, with houses clustered around the green, and farmsteads in outlying areas.

Mill Villages – Some of the most distinctive and historically significant features of the Valley. Mill villages were centered on the factory buildings of the mill, and usually contained company stores, worker housing, churches and schools. Most of these villages extend from the River's edge where the factory was located, and on up to higher ground. Mill villages are often marked by the unique architecture of the mill itself, worker housing, and the spatial relationships between these buildings. In many cases these communities were planned by the mill owner, with shops, schools, libraries and meeting house, so that the village was a self-contained community for mill workers and their families.

Urban Centers – The Valley is anchored by dense urban centers at each end. Providence, Rhode Island developed as an important seaport with warehouses, wharves, taverns, shipwrights and other maritime businesses along the waterfront. Worcester, Massachusetts developed as a regional market center for largely rural central Massachusetts. Pawtucket and Woonsocket, Rhode Island also developed as regional centers of commerce. These urban centers of the Blackstone Valley developed with a typically dense, amorphous pattern, with a variety of architectural types (mills, wood triple deckers, brick storefronts), and hard river edges where industrial buildings abutted the water's edge. These urban centers remain densely populated today.

The Valley Today – A Changing Landscape

Within commuting distance to several large metropolitan areas, the Blackstone River Valley corridor is experiencing an influx of new residents, and the development of housing and commercial uses to serve them. Particular development pressure is affecting the communities in proximity to Routes 495 and 295, as well as rural areas along Route 146 outside of the urban centers of Worcester, Woonsocket, and Providence.

One of the most problematic development issues is the decentralized pattern of growth in the region. Uncontrolled sprawl, including low-density housing and strip shopping centers is consuming valuable open space, wildlife habitat and agricultural land. This contemporary form of development is obliterating older, traditional patterns which gave the Valley its unique character. In the long term this type of growth will compromise the unique physical and cultural history of the Valley, its natural resources, and its way of life. Wise decision making at the local level can have a positive effect on future land use and development patterns.

More than the net loss of open space, it is the fragmentation of habitats that puts natural resources most at risk. Contiguous open spaces offering a variety of ecosystems, such as wetlands, meadows and forests, support a diversity of wildlife. Connections among these open spaces allow wildlife to move into wider territory and different habitats. Water can also be more abundant and purer when the flow between aquifer recharge areas, soil percolation, wetlands, streams and surface water bodies – ponds, lakes, reservoirs – is uninterrupted. The location of new development, its compactness or spread, and its relationship to resources are therefore more important to control than the total amount of development. Local zoning bylaws, overlay districts, specific site plan review criteria and other tools can direct new growth in ways that minimize adverse impacts on vital resources.

Retaining traditional community character and protecting natural resources, while still accommodating growth are both desirable and attainable goals. Several innovative solutions to this challenge are offered in the *Land Use Management Report for the Blackstone River Valley National Heritage Corridor*. A few communities in the Corridor are applying their own unique remedies to balance conservation and growth, such as Lincoln, Rhode Island where overlay districts respond to designated areas of more sensitive natural resources.

Opportunities – Preservation and Recreation Potential

The Valley still contains extensive farmland and traditional landscapes. These resources can be protected with the help of state agricultural programs which preserve open space by buying from farmers the development rights to their land, and with the help of local land trusts to acquire or put under conservation agreements key open spaces. Local communities in the Blackstone Valley can benefit from such programs perhaps more than in other regions: the cumulative effect of preserving these open spaces will have greater impact on scenic resources, tourism and the protection of natural systems than the sum of individual efforts or the same efforts in more developed areas. Innovative residential and commercial development can also preserve key open space and scenic landscapes.

To complement and augment the recreational potential of the River, trails in the Valley, such as the North-South Trail, Midstate Trail and Southern New England Trunkline Trail, can connect state parks and forests with each other and with other inland resources. Similarly, trails can be developed along the tributaries of the Blackstone River, which extend outward into the Valley, to offer the experience of continuous corridors of river ecosystems as well as opportunities for historic and cultural interpretation of the Valley.

HABITATS AND WILDLIFE

The Blackstone River and its Valley contain a variety of habitats which support a diverse wildlife. The number of animal and plant species native to the Blackstone Valley Corridor is impressive.

The number of fish species has rebounded to twenty throughout the Valley's waterways and waterbodies, despite the loss of several species of anadromous fish after dams were built along the River. There are 18 species of amphibians and 17 species of reptiles. Birds number 114 species of nesting (resident) birds, not including migratory species. Mammals total over 40 species, not including species of migratory bats. There are a minimum of 1,000 species of native plants in the Blackstone Corridor. This figure does not include introduced plants and lower forms of moss and lichen.

Because of the dominance of the River in the natural resources of the Valley, waterfowl occupy a special place of importance among the wildlife species native to the Corridor. Of the more than 200 species of birds that have been sighted in the Blackstone River Valley, about half strongly depend on wetlands for their habitat.

Wetlands, lakes, impoundments and slow moving rivers and streams in the Blackstone River Valley provide habitat for resident (nesting) and migrating waterfowl. The principal nesting species are the mallard, wood duck and Canada goose. The black duck also breeds in the basin but its nesting population has declined significantly during the last several decades, as it has elsewhere in the Northeast. Migrant species include the mallard, wood duck, Canada goose, black duck, mallard and black duck hybrids, green-winged teal, blue-winged teal, pintail, American widgeon, common and wooded mergansers, bufflehead, scaup, common goldeneye, grebes, ring-necked duck and American coot. Waterfowl habitat provided by the Blackstone River basin is nationally significant: the area has been identified as an important flyway for migratory waterfowl by the North American Waterfowl Management Plan.

The most important waterfowl habitats in the Valley are several large impoundments on the Blackstone River. These include Fisherville Pond, Riverdale Pond and Rice City in Massachusetts and Lonsdale Pond, Manville Pond and Ashton Pond in Rhode Island. Lackey Pond on the Mumford River in Massachusetts also provides significant waterfowl habitat. These impoundments are valuable to waterfowl because they have extensive areas of shallow open water habitat interspersed with emergent marsh. This combination provides breeding habitat for resident species, and resting and feeding habitat for migrating waterfowl passing through the area in the spring and fall seasons. Significant nesting habitat for nesting species, especially the mallard, a cosmopolitan breeder, is also provided by numerous other small lakes, impoundments, ponds, slow moving streams and wetlands located throughout the Valley.

Historically, wet meadow and shallow marsh habitat at Fisherville, Rice City Pond and Lackey pond provided excellent waterfowl habitat. Fisherville Pond and Rice City Pond were considered the most productive areas in the state, especially for mallards and black ducks. Wood ducks were also abundant. Much of the habitat value of Fisherville Pond for breeding and migrating waterfowl was lost, however, after a drawdown in the early 1980s destroyed about 10 acres of the most productive emergent marsh/open water habitat at the site.

The Lonsdale (also known as Valley Falls) Marshes are the most valuable waterfowl habitat in northern Rhode Island. They provide nesting habitat for waterfowl and several of the rarer marsh-nesting birds including the least bittern and sora rail. The Lonsdale Marshes are also a feeding and resting habitat for migratory waterfowl: as many as 500 to 1,000 birds can be seen using the habitat each spring and fall migratory season.

Rare Species: Endangered, Threatened and of Special Concern

Please see Appendix A for a list of rare species of animals and plants in the Blackstone River Valley National Heritage Corridor.

NATURAL RESOURCES SITES

A Natural Resources Inventory and Assessment is needed to provide a beginning documentation and analysis of key resources throughout the Heritage Corridor. A better understanding of natural resources, how they function and contribute to our well-being, what threatens them and what actions can be taken to protect them, can form decisions today that will have far-reaching consequences in the future. The Inventory therefore is more than a list of important sites and the reasons they have value, but also a series of recommendations around key resources, for a variety of public and private actors to undertake. These actions on the part of local communities, federal and state agencies, key institutions, organizations and individuals, with the support and partnership contributions of the Corridor Commission, will result in a healthy natural environment and appropriate land use patterns for the whole Valley. Controlled locally and coordinated regionally, a better managed landscape of natural resources is an appropriate setting for the preservation, enhancement and appreciation of the cultural and historic resources of a Heritage Corridor with national significance.

Process

To begin the inventory and assessment of the Valley's resources, several maps and sources of information were collected and key people interviewed. An advisory committee was formed, representing agencies involved in natural resource management and private groups involved in resource advocacy and stewardship. A survey was distributed to members of the advisory committee as well as to other interested parties, local communities, non-profit groups and local organizations, asking them to list and describe their priority natural resources sites. A framework for evaluation was developed in the form of a matrix listing sites and allocating categories of Natural Values: Geology, Hydrology, Vegetation and Habitat; categories of Cultural Values: Traditional Land Use, Scenic, and Historic; and categories of Local and Regional Significance. The advisory committee then discussed each of the sites and ascribed to them values of high, medium or low under each category of resource attribute.

Inventory Matrix

The result of this analysis process was a matrix of 70 sites, listed on the Site Location Legend on the following page, and identified on the appended map of Natural Resources Sites. Each site shows a distribution of values under Natural and Cultural categories and a description of the issues facing the resource. A sample description is included in Appendix A. Sites with highest significance in the categories of Natural and Cultural values were culled from the matrix for further study of their attributes and to develop recommendations for action.

Local Plans and Corridor Initiatives

To this analysis was added a review of local planning documents, including Open Space and Recreation Plans, as well as the record of past and ongoing initiatives of the Corridor Commission and its partners. These additional sites represent local planning efforts, preservation priorities and projects likely to merit continued support.

Regional Impacts

An analysis of regional impacts from growth and development pressures on the resources of the Valley was used to evaluate common threats and to refine recommendations. Trends were identified through interviews with regional planners, representatives of regulatory authorities and private non-profit organizations, as well as through literature review.

Subregions

Communities in the Blackstone Valley were grouped into nine subregions. The primary reason to consider smaller sections of the Valley was to examine various natural systems, such as waterways, marshes, forests, etc., in the context of municipalities sharing common ecosystems. To be sure, there are no distinct criteria for organizing the subregions in a particular way; some communities could have been grouped with another subregion just as easily, emphasizing the connection with a different natural system. The important point of examining subregions is to recognize that municipalities need to cooperate with their neighbors to manage and benefit from natural resources existing across political boundaries.

Recommendations

Finally, a description of the natural resource, corresponding issues, and recommendations for action were developed for River sites, Valley sites and other sites grouped by subregion. The River sites are organized into two categories: sites determined to have significantly high value as either a natural or cultural resource, and sites where past and ongoing initiatives on the part of the Commission and other actors make them particularly noteworthy. The Valley sites are also organized into two areas: 1) sites determined to have high cultural or natural value and where past or continuing activities make them noteworthy; and 2) remaining high value sites, which are mentioned in the Subregions section of the recommendations. All River and Valley sites are identified on the appended Map of Natural Resources Sites. Sites grouped by Subregion, identified on the nine Subregion maps, include the River and Valley sites on the Inventory list, as well as other sites which are of important local significance because they are a scenic resource, water resource, or key open space.

Together these descriptions and recommendations assess the natural resources of the Blackstone Valley in the context of a nationally significant landscape. This section provides an array of local and regional actions, underway or suggested to be undertaken, that promise to be most successful in preserving and enhancing the Corridor's unique assets.

INVENTORY OF SIGNIFICANT NATURAL RESOURCES SITES – SITE LOCATION LEGEND

SITES HAVE BEEN NUMBERED GENERALLY FROM NORTH TO SOUTH ALONG THE VALLEY

| | |
|----|---|
| 1 | Cascade Waterfall (Worcester) |
| 2 | Cider Mill Pond and Park (Worcester) |
| 3 | Coes Reservoir (Worcester) |
| 4 | Beaver Brook (Worcester) |
| 5 | Coal Mine Brook and Worcester Coal Mine (Worcester) |
| 6 | Crow Hill (Worcester) |
| 7 | Convergence of Middle and Blackstone Rivers (Worcester, Quinsigamond) |
| 8 | Lake Quinsigamond (Worcester) |
| 9 | Broad Meadow Brook (Worcester) |
| 10 | Blackstone River Rapids (Millbury) |
| 11 | Fisherville Pond (Grafton) |
| 12 | Great Meadows (Grafton) |
| 13 | Upton State Forest (Upton) |
| 14 | Stockwell Ponds (Sutton) |
| 15 | Keown's Orchards (Sutton) |
| 16 | Foppema's Farm (Northbridge) |
| 17 | Sutton State Forest (Sutton) |
| 18 | Purgatory Chasm (Sutton) |
| 19 | Rockdale Pond (Northbridge) |
| 20 | Shining Rock (Northbridge) |
| 21 | Old Section of River and Canal (Northbridge) |
| 22 | Lookout Rock (Northbridge) |
| 23 | West River at Mendon (Northbridge) |
| 24 | Peppercorn Hill and Fen (Upton) |
| 25 | Waters Farm (Sutton) |
| 26 | Whitinsville Reservoir System (Sutton, Northbridge, Douglas) |
| 27 | Rice City Pond/Goat Hill Lock (Uxbridge) |
| 28 | Miscoe Spring (Mendon) |
| 29 | West Hill Dam and Park (Uxbridge, Northbridge) |
| 30 | Lake Nipmuck Rookery (Mendon) |
| 31 | Skull Rock (South Uxbridge) |
| 32 | Daniel's Farm (Blackstone, Mendon) |
| 33 | Mill River Watershed (Mendon ,Blackstone, Woonsocket) |
| 34 | Laurel Brook and Chockalog Pond (Uxbridge) |
| 35 | Blackstone River at River Road (Uxbridge) |
| 36 | Screech Hole Bog (Burrillville) |
| 37 | "Balm of Life" Spring (Uxbridge) |
| 38 | Blackstone Gorge (Blackstone, North Smithfield) |
| 39 | Slatersville Reservoir System (Burrillville, North Smithfield) |
| 40 | Woonsocket Hill (North Smithfield) |
| 41 | The Blunders (North Smithfield) |
| 42 | Iron Mine Hill (Cumberland) |
| 43 | Pine Swamp (Cumberland) |

| | |
|-----------|---|
| 44 | Diamond Hill State Park (Cumberland) |
| 45 | Ash Swamp (Cumberland) |
| 46 | Pound Road (Cumberland) |
| 47 | Long Brook (Cumberland) |
| 48 | Albion Floodplain Forest (Lincoln) |
| 49 | Scott Brook (Cumberland) |
| 50 | Lime Rock (Lincoln) |
| 51 | Ashton Meadow (Lincoln) |
| 52 | Miller's Oak (Cumberland) |
| 53 | Powder Mill Ledges (Smithfield) |
| 54 | Reaper Brook (Smithfield) |
| 55 | Lincoln Woods State Park (Lincoln) |
| 56 | Chase Farm (Lincoln) |
| 57 | Lonsdale Marsh (Lincoln, Cumberland) |
| 58 | Grotto Marsh at Butler Hospital (Providence) |
| 59 | Seekonk River Fringe Marsh (Pawtucket) |
| 60 | Intact Western Forests (Douglas, Burrillville, Gloucester) |
| 61 | Wallum Lake (Douglas, Burrillville) |
| 62 | Buck Hill Impoundment (Burrillville) |
| 63 | Croff Farm Brook (Burrillville) |
| 64 | Cedar Swamp Pond (Burrillville) |
| 65 | Clear River (Burrillville) |
| 66 | Bowdish Reservoir (Gloucester) |
| 67 | Ponaganset Mounds (Gloucester) |
| 68 | Hemlock Ledges (Gloucester) |
| 69 | Smith and Sayles Forest (Gloucester) |
| 70 | Schwindel Swamp (Gloucester, Burrillville) |

ANALYSIS OF NATURAL RESOURCES INVENTORY

Natural Value

Six sites have rankings of *high* significance in three out of four categories of Natural Value: geology, hydrology, vegetation and habitat.

- | | |
|--|--|
| <ol style="list-style-type: none">1. Whitinsville Reservoir System (26)2. Blackstone Gorge (38)3. Diamond Hill State Park (44)4. Lime Rock (50)5. Lonsdale Marsh (57)6. Cedar Swamp Pond (64) | <p>Number indicates location on map of Natural Resources Sites</p> |
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An additional 11 sites have rankings of *high* in two out of the same four categories of Natural Value.

1. Cascade Waterfall (1)
2. Coal Mine Brook and Worcester Coal Mine (5)
3. West Hill Dam and Park (29)
4. Laurel Brook and Chockalog Pond (34)
5. Screech Hole (36)
6. Intact Forest (60)
7. Wallum Lake (61)
8. Croff Farm Brook (63)
9. Bowdish Reservoir (66)
10. Hemlock Ledges (68)
11. Smith and Sayles Forest (69)

Cultural Value

Fifteen sites have rankings of *high* significance in two out of three categories of Cultural Value: traditional land use, scenic and historic.

1. Coal Mine Brook and Worcester Coal Mine (5)
2. Fisherville Pond (11)
3. Keown's Orchard (15)
4. Foppema's Farm (16)
5. Purgatory Chasm (18)
6. Old Section of River and Canal (21)
7. Waters Farm (25)
8. Whitinsville Reservoir System (26)
9. Rice City Pond, Goat Hill Lock (27)
10. Miscoe Spring (28)
11. Skull Rock (31)
12. Daniel's Farm (32)
13. Lime Rock (50)
14. Ashton Meadow (51)
15. Chase Farm (56)

Three sites ranked *high* in categories of both Natural and Cultural Value.

1. Coal Mine Brook and Worcester Coal Mine (5)
2. Whitinsville Reservoir System (26)
3. Lime Rock (50)